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The Political Economy of Water Infrastructure: An introduction to Financialization

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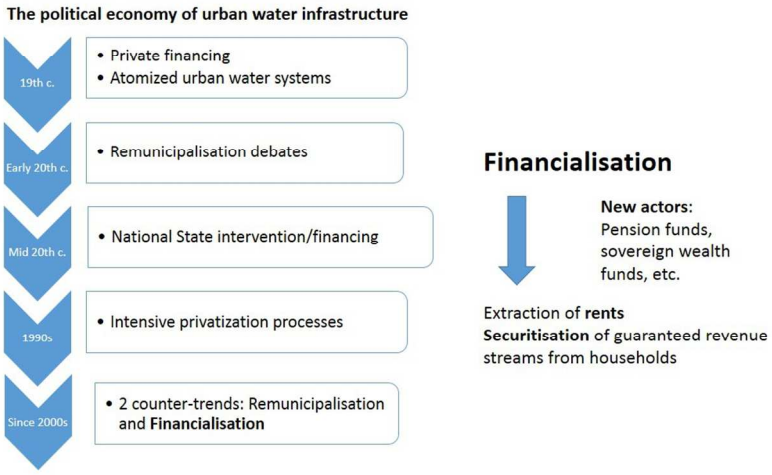

Water infrastructure has been owned by and governed through differing combinations of the private and public. In the present moment, financialisation is radically reconfiguring these arrangements, turning water infrastructure into a wealth extraction mechanism.

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Abstract

Water infrastructure has been financed by differing combinations of private and public ownership throughout history and across different geographies. In the present moment, processes of financialisation suggest a radical reconfiguration of these arrangements in a number of locations,

such that water infrastructure is being transformed into a wealth extraction mechanism. In this Primer Article, we introduce financialisation, showing how the term describes a process through which financial actors have gained new power and in which the locus of profit making at least appears to have shifted from the 'real economy' to a financial economy. In the case of water infrastructure, processes of financialisation have enabled apparently fixed and stable forms such as pipes, water treatment plants and sewers to be transformed into liquid assets, opening up new opportunities for sovereign wealth funds and pension fund investors. The super-profits made by these financial actors are best conceptualized as forms of rent, derived in part from the monopoly ownership of a basic need. This distinctive shift needs to be positioned in relation to broader changes in the political economy of water infrastructure. We situate financialisation historically in relation to the development of water utilities and networks: municipalisation and nationalization during the first decades of the 20th century, privatisation since the 1990s, and renewed interest in remunicipalisation in some places alongside the deepening logic of financialisation in others. We conclude by thinking through the likely implication of water financialisation for future infrastructural arrangements.

Keywords: finance, rent, financialisation, privatisation, infrastructure

Introduction

In a growing number of instances around the world, infrastructure is being reconfigured in ways that maximise wealth extraction (Hildyard, 2016). In the case of London, for example, the city's water and sanitation provider has been transformed from a public utility into a private company and now, in its most recent form, into an investment vehicle for sovereign wealth funds in Kuwait, Abu Dhabi and China. Simultaneously London's water infrastructure now provides a reliable revenue stream for pensioners in Canada and the UK. Providing infrastructure for actual needs is becoming less relevant than extracting "value from illiquid assets by turning them into liquid forms" (Pryke & Allen, 2017, p.2). Of course, the two need not be incompatible – it could be quite possible for wealth to be extracted from a project that the city desperately needs (for a more optimistic take on such a process see Castree & Christophers, 2015) – however the growing importance of infrastructure's function as a wealth extraction mechanism emphasizes the significance of a process often referred to as financialisation. Reflecting this significance, the literature on the financialisation of water has grown rapidly in recent years (Ahlers & Merme, 2016; Allen & Pryke, 2013, 2017; Bayliss, 2014, 2017; Bresnihan, 2016; Loftus & March, 2016, 2017; Merme et al., 2014; Schmidt & Matthews, 2018). Such research builds on a much larger interest in the changing dynamics of capitalist societies (Harvey, 2010), the role of infrastructure within those changing dynamics (Graham & Marvin, 2001), and the spiralling profits within a financial sector that now appear to outstrip the wealth amassed in manufacturing, construction and the service economy (Lapavitsas, 2014). Generally associated with the growing power of new financial actors (Epstein, 2002), financialisation is also understood by some to refer to a process in which the locus of profit-making has shifted from the 'real' economy to the financial economy (Stockhammer, 2010). In what follows, we will explore what is meant by financialisation as well as the ways in which this process appears to influence the construction, form and ownership of water infrastructure.

WHAT DO WE MEAN BY FINANCIALISATION?

For Christophers (2015, p.184), "if globalization was the new buzzword of the 1990s and neoliberalization…of the 2000s, then financialization is very much the buzzword of the 2010s". As a buzzword, financialisation clearly has limits and risks describing such a broad array of changes that it is rendered meaningless. Christophers (ibid.), therefore emphasises the "analytic, theoretic, strategic, optic, and empiric" limitations. Nevertheless, for others the term has clear analytical purchase, referring to a distinct set of shifts that have taken place within advanced capitalist economies. Cutting across the two principal understandings of financialisation referred to above (as the growing power of financial actors and a shift in the locus of profitmaking) there is a demand for a conceptual framework that accounts for apparent shifts in the way in which capitalism works. Some conceptual clarity on what makes capitalism distinctive is therefore necessary.

As a mode of social and economic organization capitalism is distinctive in separating the vast majority of the population from their means of existence. The only way of accessing necessities such as food, clothing, housing and water is by earning a wage and buying them as commodities. These commodities are produced under a distinct set of conditions in which workers freely give up their time and energy in return for the wage they receive. For Marx, the origin of profits lies in this production process. Surplus value is produced when a worker exchanges her labour power (time, energy and skills) for a wage while contributing a greater value to the labour process than she receives in return. Profits are therefore tied to the exploitation of workers under these historically specific conditions. In recent years serious questions have arisen over the ability of such a conceptual framework to adequately account for the massive profits associated with financialisation (Christophers, 2017). If manufacturing, construction and the service economy now account for a relatively small part of an economy such as London's, how do we explain the massive profits accrued within the financial sector? If we transpose such a question to the water sector, it becomes one of whether investment funds make their (often massive) profits from the production and sale of potable water or from somewhere else.

Responding to the apparently new moment of capitalist development described above, Costas Lapavitsas (2014) refers to financialisation as "profiting without producing". He thereby captures the inherently speculative process through which profits appear divorced from the real economy. Fine (2013), nevertheless, points to fundamental problems in Lapavitsas' analysis and, instead, argues that financialisation is defined by the growing importance of Interest Bearing Capital (IBC). In very simple terms Interest Bearing Capital is money that is loaned in order to make more money. The repayment of interest on such a loan relies on whoever borrows the money expanding value in production. These interest payments are therefore tied to the lender gaining a future share in profits. The increasing dependence on (speculated) future returns associated with the growing circulation of IBC leads to an expansion of what David Harvey (2006) refers to as fictitious capital: "money that is thrown into circulation as capital without any material basis in commodities or productive activity" (p.95). Fine's analysis is helpful to a point in analysing the shifts within financialised water infrastructure; however, it is necessary to supplement such an analysis with an understanding of how monopoly ownership of water infrastructure enables financial actors to appropriate value in the form of rents (we expand on this significance of rents in a much longer paper (forthcoming)). The historical significance of this new relationship can be viewed more clearly when situated in relation to a periodisation of the political economy of water infrastructure.

HOW HAS THE POLITICAL ECONOMY OF WATER INFRASTRUCTURE OWNERSHIP CHANGED HISTORICALLY?

Globally, the public and the private sector have tended to take more and less important roles within the water sector at different moments in time. These roles have shaped both the ownership of infrastructural networks as well as the financing of them. Drawing predominantly on the experience of the global North, we can highlight five main historical periods in urban water supply. In any case, such a typology, it should be borne in mind, is a simplification of specific historical-geographical processes. Experiences across the global South have been even more varied than this simple periodisation suggests (Bakker, 2003; Budds & McGranahan, 2003; Swyngedouw, 2004), although several aspects of the heuristic – the shift from predominantly publicly owned systems under colonial rule, to private sector involvement following the debt crises of the 1980s – suggest some similarities.

1. Atomized private water suppliers in the city

During the early 19th century small private companies supplied some parts of the urban fabric (especially in Europe and North America), normally the richer ones, creating a social stratification of service provision (Swyngedouw, 2004). Encouraged sometimes by the public sector (Davis, 2005), the private sector, therefore, undertook a large share of the investment in the first water supply and sanitation networks: the cost of running the system was covered by user fees and flows of water were therefore directed to well-off neighborhoods as a private good, subject to the ability to pay on the part of the consumer (Castro, 2009). Notwithstanding some exceptions, such as the important case of Madrid's (Spain) mid 19th century public intervention and financing (March, 2015), Kerf (1998) compiles interesting examples from three different countries (France, Britain, and the United States) where private companies can be seen to have developed much of the early water infrastructure.

2. Municipalisation trends in the early 20th century

Throughout the 19th century, urban water supply networks confronted problems of quality and quantity regardless of the source (surface or underground). At the same time, industrialization pushed migratory flows towards cities, enlarging their population and consequently increasing the demand for water resources. During this period of rapid industrialization, pollution soared. 19th century water-borne epidemics, especially cholera, which wreaked havoc in urban Europe, unleashed an important debate regarding the need to generalize water supply to all the population. Reduced water access and sanitary concerns (water-borne diseases), combined with social unrest and recurrent urban fires (Gandy, 2002) triggered debates around the municipalisation of water services which, in many cities, resulted in the takeover of urban water services by local public sector. While user fees were still charged, financing was made possible through local taxation.

3. Increasing role of the national State leading to nationalisation in many instances

Although geographically uneven, a third stage began roughly after World War I as the water sector came to be viewed as a cornerstone for national growth (Swyngedouw, 2007): a wave of nationalizations, therefore, swept across most of the global North. Budds & McGranahan (2003) argue that these efforts crystallized and were institutionalized throughout the 20th century leading

to an almost exclusively publicly owned water sector around the world. The (national) State gained an important role as the owner, manager, and regulator of water supply infrastructure, due to different implicit needs or characteristics of the sector: large-scale capital investments in infrastructure networks, monopolistic control of the 'natural monopoly', symbolic and cultural importance of water, strategic, political, and territorial relevance, intense conflicts for its shared use, health and hygiene effects of the lack of access to water. Again, taxation, now drawn from the national level, was able to finance the dramatic expansion of water networks.

4. Private participation since the 1970s

Budds & McGranahan (2003) contend that in the global North, the shift from statist to neoliberal policies in the late 1970s explains the move back towards private provision of water. Privatising utilities thus came to be framed as a necessary response to the purported failings of a hopelessly inefficient public sector, including the need for investments to maintain the infrastructure or even the need to promote water conservation through market forces (Beesley, 1997; Davis, 2005; Johnstone & Wood, 2001; Nickson & Franceys, 2003; World Bank, 1997). Those reconfigurations raised opposition that tended to focus on: the particular attachment that people have to this most basic resource; concerns over private ownership of what remains a natural monopoly; a sense that something so basic as water should not be provided for profit; concerns over the likely environmental consequences; and a lack of available evidence that the private sector would do a better job of running the service, especially in reducing water poverty (Bakker, 2003; Castro, 2007; Hall & Lobina, 2003; Strang, 2004; Swygnedouw, 2004). Neoliberal ideas have had a profound influence on international development and policy debates in the water delivery sector (and also sewerage and sanitation), especially in the 1990s, with an increasing role for the private-sector in the global South as well. Thus, water privatisation became central to the policy prescriptions delivered by the International Financial Institutions in the form of Structural Adjustments Programmes throughout the 1980s and 1990s. Privatisation, as Karen Bakker (2003) argues, is something of a misnomer, as it frequently comprises an overlapping set of strategies from all-out divestiture to forms of public-private partnership. Each of these different arrangements imply slightly different ownership of water assets as well as differing responsibilities for capital investment, the balance of risk and the responsibility for operation and maintenance (for a full discussion, see Bakker, 2003 and World Bank, 2006).

5. Diverging reconfigurations of privatised utitilites: financialisation and remunicipalisation

In many ways processes of privatisation, alongside the wider systemic rise of finance capital in the global economy, laid the ground-work for the geographically variegated logics of financialisation to enter forms of private ownership in the sector (March & Purcell, 2014). Notably, this form of ownership is distinct from the shareholder model of privatisation. A variety of cities, regions and countries witnessed urban water management subject to value extraction strategies by private equity funds repackaging and debt-loading water infrastructures as financial investment vehicles. However, in a parallel and opposite direction, at the turn of the century localised opposition to water privatisation appeared to develop into a global movement, finding its expression in large-scale protests against the IFIs and militant local opposition to specific projects such as a contract signed for the city of Cochabamba, Bolivia (Olivera & Lewis, 2004). At the same time, expected profit rates from water privatisation failed to reach the levels expected, thereby seeming to foreclose the

encroaching logics of financialisation. Contracts were either renegotiated to benefit the private operator or, in some cases, were cancelled. Given the above, from the early 2000s the global trend towards increasing privatisation slowed and by the 2010s had begun to reverse such that remunicipalisation now outpaces privatisation (McDonald, 2018). In a nutshell, while privatisation now appears to have been outstripped by a process of remunicipalisation, other geographies from Chile, to the US and the UK bear witness to the entrance of new private actors, such as equity and pension funds, targeting water infrastructure ownership for financial super-profits.

DOES FINANCIALISATION MEAN SOMETHING VERY DIFFERENT FROM PRIVATISATION?

To grasp what is different about financialisation it is helpful to return to the example of Thames Water (for the best discussion see Allen & Pryke, 2013), the water company supplying the London region. It should be borne in mind that the Thames case is an emblematic one. In many respects it represents the height of financialisation and not the typical experience. Nevertheless, the extreme nature of the Thames case is particularly helpful in exemplifying what is really distinctive about financialisation. For the first five years following privatisation the UK government held a "golden share" in this newly privatised utility, preventing any dramatic changes in ownership and ensuring that Thames Water adhered to the kind of model of shareholder capitalism originally promoted by the Thatcher government. By 2001, however, Thames Water was purchased by the German utility company RWE. Then, in 2006, the ownership of the company changed even more dramatically when Kemble Water Holdings Ltd, a private equity company, purchased the water utility. Thames Water thereby became one of four water and sewerage utilities in England and Wales to be owned by a private equity company. Led by the Australian Investment Bank, the Macquarie group, Kemble Water built on the latter's significant experience in infrastructure financing and, very quickly, the financial model around Thames Water transformed in ways that are now emblematic of financialisation. Thus, in 2007, the revenue stream flowing from household bills – a particularly stable, inflation protected and regulated revenue stream in the UK context – was repackaged as a financial commodity through the process known as securitisation. An opaque corporate structure subsequently developed in which company debt could be raised against future revenue streams and in which this debt rapidly outpaced equity in the company finances (in what is known as gearing). Borrowing against future returns enabled Kemble Water to ensure high dividend payments to existing shareholders. Debt levels meanwhile rose from £3.2 billion to £7.8 billion by 2012 (Bayliss, 2014; Mazzucato, 2018, p.109). Since privatisation and subsequent take-over by private equity, nine water companies (including Thames Water) have seen average debt levels rise by 74 per cent between 2003 and 2013, while equity fell by 37 per cent (Bayliss, 2014). On occasion dividend payments exceeded profits as Kemble Water appeared to become a particularly effective vehicle for maximising returns on the investments of the Macquarie group's clients. Over the same time, the ownership of Kemble Water transformed as Macquarie's stake was gradually acquired by pension funds and sovereign wealth funds. At the time of writing, the sovereign wealth funds of Abu Dhabi, China and Kuwait together own a 27 per cent stake in the company; the Ontario Municipal Employees' Retirement Scheme owns a 27 per cent stake; and the Universities Superannuation Scheme owns a further 11 per cent stake.

Clearly, since 2006 something fundamental has changed in the manner in which Thames Water operates. The part of the company overseen by the consumer regulator is now relatively insignificant in the entity's overall function. Instead, financial wizardry has become far more

significant to the overall health (or ill-health) of the firm and to the production and sale of potable water appears far less relevant to the profits realised. Instead, such utilities rely on the securitisation of guaranteed revenue streams that can be sold on as financial commodities within a range of bundled investment packages. Understanding this process demands an interpretation in which value, rent and finance are seen as finely interwoven (see a more extensive forthcoming publication). Thus, the super-profits realised by financialised utilities are made possible at least in part by the capture of different forms of rent through the monopoly ownership of water infrastructure.

Sidebar title: Rents

At its most basic level, rent refers to payment for access to a resource such as housing, land or patented knowledge. Within the Marxist tradition, rent is understood to be a social relationship made possible by processes of dispossession and through the development of a legal system establishing property rights. Over time dispossession and property titling come to be naturalised and rent appears as a simple relation between things, not a relationship forged through human action. Marx's own analyses of rent focused predominantly on agriculture, exploring the persistence of a class of landowners and its influence on profit rates and the circulation of capital into and out of the agricultural sector. In so doing, he developed three separate categories of rent: monopoly, absolute and differential rent. From the 1970s onwards, scholars began extending Marx's discussions of agricultural rents to urban land and housing markets. More recently, others have further expanded the discussion in order to analyse how rents are accrued within emissions trading schemes, ownership of infrastructural assets, as well as how surplus profits are rooted in differences in natural conditions. In so doing rent-theoretical perspectives have enabled a focus on environmental questions and state policies as well as anti-colonial critiques of an emerging production regime based on resource extraction. Rent-theoretical perspective matter for financialisation in beginning to point to the origin of finance's super-profits within the reconfiguration of ownership and risk of infrastructural assets.

WHAT IS THE LIKELY INFLUENCE OF FINANCIALISATION ON THE DEVELOPMENT OF INFRASTRUCTURE PROJECTS?

New financial mechanisms have enabled infrastructure to be enrolled within a system of rent extraction in ways clearly not envisaged in the early years of water privatisation. Indeed, infrastructure has become one of the crucial sites for mopping up over-accumulated capital within the global economy over the last two decades (Torrance, 2009). Concurring with Merme et al. (2014) we argue that a radical shift in the financing model of water infrastructure must be seen as one of the key influences on this shifting model of provision and infrastructure development.

Pryke & Allen (2017) illustrate several of these shifts through the Carlsbad desalination plant in San Diego, California. Through a particularly detailed analysis of the range of financial actors and investment packages that gave rise to the desalination plant, they demonstrate "the ability of financial intermediaries to extract value from illiquid assets by turning them into liquid forms" (p.2). Securitisation, as described above, is a crucial part of the process they describe. Thus, through packaging guaranteed revenue streams as a financial commodity, a range of investors are able to "extract value" from the plant. Nevertheless, Pryke & Allen (2017) go beyond this process to look at

a broader "range of financial techniques that capture value: from the refinancing of debt and the reduction of borrowing costs through to the restructuring of bond and equity returns over the lifetime of a project. On this view, everything from the evaluation of operational cash flows to value searches and their extrapolation, through to the discounting of future value streams, feed into expected returns" (p.6).

Elsewhere, returning to the example of Thames Water, Loftus & March (2016) argue that the construction of the UK's first major desalination plant, the Thames Water Desalination Plant at Beckton needs to be viewed in relation to the overall financial model being pursued by the utility. At a cost of £270 million many initially viewed the plant as a costly, environmentally destructive, vanity project for Thames Water that would simply entrench wasteful water use when investments were urgently needed for upgrading a crumbling piped network across the city. Nevertheless, within the current regulatory framework the plant can also be viewed as an opportunity to generate new revenue streams and expand the terrain over which rents can be captured. While not used to provide water to the network since its completion in 2012, the plant has been rebranded as the "Most Sustainable Project" in 2009 and "Desalination Plant of the Year" in 2011. An even more overt example, the Thames Tideway Tunnel (TTT) is currently undergoing construction at a cost of £4.2 billion (Loftus & March, 2017). This pharaonic project is ostensibly predicated upon the need to upgrade London's overburdened sewerage network to tackle Combined Sewer Overflows (CSOs). Requiring a Special Purpose Vehicle to be established that is separate from Thames Water, the TTT has opened up one of the most expansive terrains for generating revenue streams within the water infrastructure sector in Europe. Already, several years before the tunnel will open, annual household bills had increased on average by £13 to fund the tunnel. Thames currently estimates an average annual increase of £20-25. The beneficiaries from the new revenue streams opened up are large institutional investors. Thus, if financialisation is likely to influence infrastructure projects in the future, it will be in reconfiguring them as wealth creation mechanisms and through favouring projects – often large-scale ones – that maximize the ability to capture rents.

Conclusion

If the development of water infrastructure over the last few centuries needs to be contextualised in relation to shifting patterns of ownership and investment, the present moment requires some understanding of processes of financialisation. Infrastructure projects in a range of different locations are now being led by a new class of financial elites that seems able to transform the guaranteed revenue streams emanating from water's monopolistic status into a range of financial products. At no point in the past has water infrastructure been so deeply tied to the fortunes of sovereign wealth funds, pension schemes and institutional investors. This tie represents a fundamental shift from the transformation of local waters into global money identified by Swyngedouw (2004). Instead, the revenue streams emanating from fixed infrastructure assets are transformed into financial commodities which guarantee the extraction of rents for states, pensioners and financiers around the world. While this may not necessarily always be a negative move – indeed for Castree & Christophers (2015) finance can provide a crucial resource for sustainable transformations – in many instances financialisation favours a process of accumulation by dispossession in which ecologies are produced out of an increasingly risky, heavily leveraged and fundamentally undemocratic financial model. As Allen & Pryke (2013) emphasise, this suggests a

model geared more towards providing benefits to investors than consumers, and one that increasingly loses sight of the needs of citizens.

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